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FIRE INSURANCE RATING

BY

DONALD DE VERE FOSTER

THESIS

FOR THE

DEGREE OF BACHELOR OF ARTS

IN

BUSINESS ADMINISTRATION

IN

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THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

Donald De Vere Foster

ENTITLED Fire Insurance Rating

IS APPROVED BY ME AS FULFILLING THIS PART OF THE REQUIREMENTS FOR THE

DEGREE OF Bachelor of Arts in Business Administration

In the College of Liberal Arts and Sciences

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FIRE INSURANCE RATING

Chapter I

EARLY HISTORY OF FIRE INSURANCE RATING

Fire insurance may be defined as that agency which is designed to collect certain stipulated sums of money from each of a large group of individuals in return for which these individuals receive protection from all direct losses caused by fires during a certain period. By direct losses is meant only those losses involving real and personal property. In other words, the function of fire insurance is to distribute fire losses equitably. An equitable distribution means that each individual, each property group, each community, each state, may during each year justly claim relief from an excessive burden of fire destruction.

It is questionable how the individual or even the city could endure, without insurance, such severe losses as the Chicago, Boston, Baltimore, or San Francisco conflagrations.

Modern business undertakings which are based largely on credit could not safely be carried on without the protection afforded by fire insurance. Capitalists loan sums of money on buildings far in excess of the land value because they know that with the insurance policy as collateral the security is safe. The merchant, who is a large employer of credit, could not afford to sell goods to the consumer on as small a margin of profit as he does, if he had to assume all of the risk of his stock being burned.

The first fire insurance companies¹ date back to the period immediately following the great London fire in 1666. They were organized by Barbon and Povey, two English traders. The former would assume liability on the building only, while the latter insured both the building and contents. Early rates on buildings were based on their rental value and mode of construction. The contents were insured at the same rate as the building until 1714, when an advance on the contents' rate was made by the Union Fire Office of London. From the very beginning it was realized that wooden buildings were more hazardous than brick and stone buildings. Evidence of this fact is apparent in Barbon's tables of 1681, in which the former were rated almost twice as high as the latter. Term insurance was introduced at this early date also, a majority of the policies being written for a period of seven, fourteen, or twenty-one years.

In 1720, when the Royal Exchange and the London Assurance were incorporated, the practice of publishing prospectuses¹ had become established. The Royal Exchange stated that it would insure "any college hall, house or any other building, and all goods, wares and merchandise contained therein to their full value, except notes, bills, tallies and books". The rate for brick and stone buildings and contents was five shillings for every £250; for timber, plaster, and thatched buildings the rate was eight shillings. However, if the sum insured exceeded £1500, an advance over the rates quoted above went into effect, the brick and stone buildings being rated at seven shillings, six pence per £150, and the timber, plaster, and thatched buildings at twelve

1. Modern Business Series, Vol. X, - p. 115.

shillings per £150. This practice of increasing the rate of premium when the amount insured passed a certain sum lasted until 1848 in Great Britain, but never secured much of a foothold in this country.

About this time (1720)¹ the insurance companies began to classify trades and vocations on the basis of the hazards present in each undertaking. Breweries, distilleries, chemical laboratories, and powder factories were charged a higher rate than the average industrial factory. Under this early classification, risks were divided into two large classes, common and hazardous. Those risks which were classed in the first group were sub-divided into common and half-hazardous. The hazardous group was divided into hazardous, one-half-doubly-hazardous, and doubly-hazardous.

The first insurance company² in this country was organized at Charleston, South Carolina in December 1735. The company operated on the mutual plan, and was known as the Friendly Society. Six years after the date of organization, the company incurred a loss of \$1250 in a fire and as a result ceased business.

The Philadelphia Contributionship Company³ was organized in 1752 under a Pennsylvania charter. This company insured houses for a minimum term of seven years. If brick, the charge was twenty shillings for each £100 of insurance, and if frame, the charge was sixty shillings for each £100. A short time after the organization of this company an additional charge was made on all houses having trees in front of them.

As a result of this increase in rate, the Green Tree Company was formed. This company established two sets of rates, one for

1. Modern Business Series, Vol. X - p. 116.

2. Spectator, December 31, 1914.

3. Modern Business Series, Vol. X - p. 117.

houses having no trees in front, and the second, somewhat higher than the first, ^{houses} for/having trees in the same lot. At this early time one can see that the result of raising the rates was the direct cause of the formation of the new company, thereby increasing competition.

In 1797 the Mutual Fire Insurance Company of Boston made an extensive research¹ into the statistics covering the number of buildings destroyed by fire for a period of 38 years, and found that the loss was about 18% per annum, in other words about one building in five was destroyed each year.

Probably the first instance of rating by schedule was in England in 1848.² In that year a schedule similar to modern schedules was devised to apply to woolen mills. From that time until the present various forms of tariffs have been in use, generally applying to the whole of Great Britain, although occasionally only to parts.

The early tariffs in this country were formed largely by duplicating the English schedules, with slight modifications to meet new conditions found here. The various risks were grouped into classes, the number of classes varying in different parts of the country. As an illustration, in one section buildings were divided into six different classes,³ the rate of a building in the first being 35 cents, in the second 37½ cents, third 40 cents, fourth 42½ cents, fifth 45 cents, and sixth 50 cents. In this same section the rate on contents was determined by the classification of the contents. The not-hazardous group consisted of coffee, household furniture, linens and paints ground in oil. In

1. Modern Series Business, Vol. VI - p. 116

2. *ibid.*

3. *ibid.* - p.118

the hazardous group chinaware, plate glass, cotton bales, and fire crackers were listed. The extra-hazardous was composed of apothecaries' supplies, fur dresses, and printing supplies. The specially-hazardous group was made of barbers' supplies, gas makers' supplies and the contents of large manufacturing risks.

The National Board of Fire Underwriters¹ was organized in 1866. The object was to regulate rates and commissions throughout the entire country. A large fire on July 4, 1866 at Portland, Maine, involving a loss of about \$10,000,000 lent a great impetus to the movement for a national rating system. The Board undertook to determine the rates for the entire country by working through special organizations in the various states, and with the assistance of the agents of the various companies. For the first few years the work was very successful, but by 1871 it had begun to decline. In this year the great Chicago fire lent a new impetus to the movement, which was further strengthened the following year by the Boston fire. The success of national rating was rather short-lived, and was soon abandoned as impracticable. The Board is still in existence and its membership embraces 124 of the leading companies. Its chief function now is educational, although to a certain extent it exerts a general influence toward uniformity and better practices in the business. It is the representative body which acts for the underwriters in matters of general importance to the companies and to the public.

After the failure of the National Board in the rating problem, local organizations assumed this function. These were composed of representatives of the companies, who were familiar with local conditions in the different communities. The territory each covered

1. Modern Business Series Vol. X - p. 121.

varied in extent from a small city in some instances to several states. It was during this period that rating by schedule began to come into general prominence, but as each district was rated by different men, the rates were not uniform. In order to put rating on as nearly a uniform basis in all parts of the country as possible, Mr. F. C. Moore originated the idea of a Universal Mercantile Schedule.

This schedule¹ was designed by a committee of 37 underwriters selected from the New England Insurance Exchange, the Underwriters' Association of New York State, Underwriters' Association of the Middle Department, the South East Tariff Association, the National Board of Fire Underwriters, and the New York Board of Fire Underwriters. This schedule combined the judgment of the largest number of underwriters ever consulted on the subject of rating. It was conceded² that the tariff was not perfect and that it would be improved from year to year.

The preparation occupied the constant labor of the committee for a period of nearly two years.³ Six successive proofs were issued and each criticized by underwriters in the United States, Canada and England. At the beginning the Committee attempted to formulate a short form, but they soon became convinced that the subject was too large to be treated in this manner, and that, in order to leave as little as possible to the judgment of the rater and to recognize every feature of the risk, a form embracing great detail was necessary.

The schedule is based on the following:- standard of environment - city;⁴ standard of construction - building; addition

1. Moore, Fire Insurance and How to Building - 182.

2. ibid - p. 703

3. ibid - p. 702

4. ibid - p. 631

of specific charges for ignitibility and combustible features of occupancy; deductions on both building and content for exceptional features of fire protection.

The standard city was described in minute detail as one having gravity waterworks, with a pressure sufficient at all times to throw a stream of water over a five-story building; the main supply pipe was to be in duplicate unless intermediate reservoirs were provided; the water pipes were to be at least six inches in diameter; a paid fire department composed of at least twelve men to each steamer; not less than two steamers to each square mile of congested districts or one to each 10,000 population up to 500,000; a hook and ladder truck to every four steamers; telegraphic fire alarm; efficient police department; good streets, 60% of which were to be 70 feet or more in width; a good building law; no outlying exposures; no unjust municipal and state taxation; and a previous five year fire record not exceeding \$5.00 per yearly fire loss to each \$1000 of insurance.

The standard building was described as one having brick or stone walls not less than twelve inches at the top story and extending through and rising at least 36 inches above the roof, and copped and increasing 4 inches in thickness for each story below to the ground, the increased thickness to be utilized for beam ledges; area of ground floor not over 2500 square feet; height not over four stories or 50 feet; floors of 2 inches plank covered with 7/8 inch flooring crossing diagonally with waterproof paper or approved fire resisting material between; wooden beam girders and wooden story posts or pillars at least 12 inches thick or protected iron columns; elevators and other passageways

between floors cut off by brick walls or by plaster or metallic studs and lathing; all communications protected by approved tin covered doors and fire proof sills; exposed windows and doors protected by tin covered doors and shutters; walls of flues not less than 8 inches in thickness, lined with fire brick and having a throat capacity not less than 96 square inches if steam boilers were used; steam heat; gas lights; cornices of incombustible material; roof of metal or tile; hollow walls or partitions to have a fire stop at each door. Providing all these conditions had been complied with the committee fixed the rate on such a building in such a city at 25 cents per \$100.

¹
Contents were rated according to their susceptibility to damage. The committee believed that similar buildings and contents in similar cities should have the same rate; that the risk should not be rated on construction alone, but that the fire fighting facilities of the city or town should be considered; that credit for fire fighting appliances, especially water, should not be the same in computing the rate on contents as on the building rate because water damages contents to a greater extent than it does buildings. The rate on a stock of goods should approach that of the building containing it in the proportion that the latter is of poor construction and liable to be totally destroyed, and as it is deficient in fire extinguishing appliances.

The schedule was formed so that it could be applied to any town or city. If local underwriters deemed the rates too high or too low and should insist on raising or lowering them, all that was necessary was to raise or lower the final rates by the

percentage needed to adjust them to the local underwriters' own ideas. If it was necessary to reduce rates in order to meet competition, the percentage method was recommended. It was advised that the rates should never be thrown open to competition, because the history of the fire insurance business shows, that whenever rates have been thrown open, it has been difficult afterwards to raise them, and that they generally, if not invariably readjust themselves upon some level lower than that from which they fell.

At first glance the schedule may seem too complex, but¹ the consensus of opinion among hundreds of experts is that it is consistent, and that the charges and deductions are as relatively correct as it is possible to make them. The entire schedule really embraces four distinct parts; the city schedule, the non-fire proof schedule, the fire proof schedule, and the warehouse schedule. In making this schedule, the makers wished to reduce the conflagrations, both in number and amount of loss, to place a premium on better building construction, confine internal fires to single floors, and to make rates uniform to all. Whether or not this schedule is correct in principle will be determined later; that it is being used in many of our cities shows that it is far better than any previous tariff.

1. Moore, Fire Insurance and how to Build - p. 625.

The Dean schedule is another method of schedule rating which has gained great respect from underwriters in the middle west. It differs from the Moore schedule in more than one essential point.

All cities, towns, and villages in a certain area are divided into six classes dependent on the degree of fire protection afforded by each. As a starting point an ordinary one-story brick building situated in a town of the sixth or lowest class is chosen. The base rate of this building is determined by raters or underwriters who have had sufficient experience in the community to know the approximate loss record. Mr. Dean furnishes a number of basis rate tables of which the following is an example of one used in which the base rate is 60¹ cents.

Height	1st class	2nd class	3rd class	4th class	5th class	6th class
1 Story	33	37	42	47	57	60
2 Story	34	39	44	49	59	63
3 Story	36	40	46	52	62	66
4 Story	38	43	49	55	66	70
5 Story	41	47	53			
6 Story	46					
Increase for additional story	07	07	07	07	07	07
Decrease for no basement	02	02	02	02	03	03

Because a building of ordinary construction is chosen, there will be fewer charges and deductions necessary in the final calculation of the rate under this schedule than under

1. Huebner, Property Insurance - p. 203.

the "Universal." Instead of fixed or absolute amounts to be added to or deducted from the base rate on account of deficiencies or improvements, the Dean schedule uses the percentage method of charges and deductions. If a change in the final rate is deemed necessary this change is affected by a change in the base rate, the relativity of the specific charges and deductions always remaining the same. For example, an open stairway in a two story building is not as dangerous as one in a five story building. Under the Universal, however, a fixed amount would be charged in both cases, while under the Dean schedule the two story building would be charged say 1% of the base rate which let it be assumed is \$1.00 or 1 cent, and in the case of the five story building with a base rate of 1.20 the charge would be 1.2 cents.

The occupancy charge under the Dean schedule is calculated from two points of view. First the particular occupancy is viewed from the standpoint of the tendency which its presence to cause a fire creates. Second, the combustibility or extent to which the contents are likely to aid the spread or intensity of a fire are considered. These charges are in percentages of the base rate of the building, and the sum of the base rate plus the charges for deficiencies minus the credits for protective features plus the occupancy rate give the "occupied rate of the building."

The rate on the contents is calculated from the point of view of the damageability to the goods; that is to say the extent to which the goods are likely to be injured by the effects of fire, such as smoke, water and heat. The base rate of the building and the location of the contents, whether on the first, second, or third floor, also plays a part in the final makeup of

the contents' rate. Separate schedules are used for contents in brick and frame buildings.

One of the most important features¹ of the Dean schedule is the exposure formula. The exposure hazard is dependent on the construction of the buildings, the distances between risks which affect each other, and the amount of fire department protection available in case of a fire. Dean classifies external exposures under three heads.

"Radiated exposure, consisting of the proportion of the building's own hazard which it radiates toward exposed risks.

Absorbed exposure, consisting of the proportion of radiated hazard absorbed by an exposed risk.

Transmitted exposure, or proportion of hazard a risk absorbs from one side, that is transmitted by it to a risk on the other side."

1. Huebner, Property Insurance - p. 205.

Chapter II

SCHEDULE RATING

That the fire loss in this country should be diminished is not questioned. A comparison of our fire losses with those of European countries brings us to the realization that we are extremely wasteful. In France the fire loss is \$.33 per capita, in the United States \$2.34.¹ Other European countries have a proportionately low ratio. The cause for this is not in the methods of fire fighting, because the average American fire department is far superior in efficiency to any department supported by European cities. Some cause for the great difference in loss ratios may be due to the scarcity of wood for building purposes in European countries as compared with the use of this material in our country. Then too the European is more careful than the average American, this being especially true in France, where a law is in force which places the responsibility of fires spreading from one building to another on the one where the fire originates. There is no doubt but that our fire loss must be reduced, and one of the principal agencies through which this can be done is rating by schedule.

As an agency for the prevention of fires, rating by schedule takes precedence. With schedule rating the insured is enabled to see why his rate is what it is, and the agent is more than pleased to tell him how this same rate may be reduced and the danger of fire greatly lessened. It is this promotion

1. Zartman, Yale Reading in Fire Insurance - p. 2

of good building construction that makes schedule rating such an important factor in lowering our fire waste. Of course, the makers should always have in mind that a premium for good building construction should be incorporated in every schedule so that the insured will feel fully recompensed for making any changes for the betterment of his risk that may lessen the hazard and thereby reduce the premium.

A further benefit of schedule rating can be observed by the rise in the burning ratio which tends to follow a period of rate demoralization. To illustrate, the following figures are submitted:-

St. Louis Business 1877-1881¹

	Premium	Losses	Expenses
1877	\$1,026,657	\$869,827	\$279,863
1878	970,023	463,054	358,908
1879	1,016,005	960,503	375,922
1880	1,362,293	955,044	504,048
1881	<u>1,392,865</u>	<u>1,326,348</u>	<u>515,350</u>
	\$5,767,843	\$ 4,574,776	\$2,134,091

Fire loss ratio 79.3%

Expense ratio .37%

The St. Louis Board of Underwriters was organized in 1872, its purpose being to make and maintain adequate rates. At the beginning no attempt was made at systematic rating the old method of flat rates being employed. After several years, however, a schedule was devised by Messrs. Western Bascome and John H. Fairchild and was put into effect in the fall of 1875. During the time that the schedule was being prepared non-board competition

1. Waterworth, Cost of Fire Insurance in the city of St. Louis.

was very strong and unscrupulous. The one universal and intelligent non-board rule was "first find out the Board rate; then cut it". This rule has been found good for New York and Chicago as well as St. Louis. This competition played havoc with the business. The new schedule was cast aside and flat rates brought into use again to meet this "cut throat" competition. Rates went down until there was no money in the business. The experience of 1877 was disastrous. In December 1879 a majority of the Non-Boarders joined the Board but there was still enough of the Non-Boarders left that rate cutting continued. In 1880 and 1881 losses were excessive. In September 1881 after a season of unparalleled loss St. Louis faced the crisis of either raising her fire insurance rates or of being without insurance. The evil of these disastrous years from the companies point of view was the inadequacy of the rates to meet local conditions. As a result the Schedule was revised, the charges being raised and St. Louis was forced to pay extra large premiums for the years following in order to make up for the cheap insurance that she had enjoyed during the period of rate cutting.

Business men who want lower fire insurance rates should profit by the lesson recently taught a number of merchants at Canton, Illinois.¹ These men had their rates reduced almost half because they forced the removal of a frame building which stood directly in the rear of four brick buildings so situated that it was practically certain that a fire starting in one would be communicated to all of the others. As a direct result of this removal two of the buildings had their rates reduced 53.4% and

1. Lower Fire Insurance Rates (circular printed by Business men of Canton, Illinois).

65.2% and the other two 39.5% while the reduction on the contents was within 7% or 8% of the reduction on the buildings.

Another advantage of schedule rating is that it is consistent and equitable, thus reducing discrimination between the man with influence and the man without.

Probably the greatest example that shows what schedule rating is capable of doing is in the work done by the factory mutuals. Stock companies have attempted to make the rate fit the hazards while the mutuals have sought to eliminate the dangerous hazards with the aim of preventing loss. They have used the principle that the proper way to control the fire hazard is to study the causes of fires, not in order to charge each risk for its specific hazard, but to eliminate these hazards. In this way every fire that has taken place has been analyzed and studied with the motive in mind of devising remedies that will prevent a recurrence of such loss. That they have been successful would be a poor way of expressing it. From 1860 to 1910¹ the rates have decreased from 40 cents to 4 1/3 cents the average for the period being 12 cents. They have written a total amount of insurance of \$3,680,000,000 and have paid \$3,118,000 in losses. During the life of the Arkwright company no assessment has ever been levied and all of the mutuals have returned an average of 84.5% of the original premium deposit. In 1910 the Arkwright people had \$270,000,000 at risk and was returning 94% of all premium deposits.

When the mutuals first entered the field of fire insurance the rates on factories were exorbitant. This was not caused by discrimination, for the fire companies treated these risks the

1. Arkwright, Fire Insurance Company (Mutual)

same as they treated other risks, that is, they made the rate fit the hazard and made no attempt to lessen the hazard¹ by advising changes in construction or arrangement. Even these rates often proved inadequate because the companies did not have the necessary knowledge on which to base them. Losses became so frequent that many stock companies withdrew from the factory field, and it was difficult for the owners to get protection at any rate. It was then that the factories began to organize mutuals among themselves.

Because of the competition of the Mill Mutuals stock companies have found it necessary to organize associations² to examine plants, prepare plans for sprinkler equipment and other fire preventive devices, and provide for inspections to see that they are properly installed. The result in the case of the stock companies' associations has been the same as in the Mill Mutuals, a very material drop in rates. At the present time the stock companies can insure these risks at practically the same price as the mutuals. That the stock companies have profited by following in the steps^{of} the mutuals is true, but that they did not see this means of lessening the fire loss but ~~had to have~~ some one else point it out to them certainly does not reflect favorably upon their business acumen.

That inequities in rates exist is not questioned, how to remedy them and make them equitable is quite another matter. The greatest harm to equity is discrimination. That is, charging one class a rate higher than the hazard warrants and allowing another

1. Zartman, Yale Readings in Fire Insurance
2. Report of Special Legislative Committee Appointed to Investigate Fire Insurance Conditions - New York -1911
- p. 64.

class to be insured at a rate lower than the hazard warrants, the companies figuring that the resultant would equalize the difference. Now dwelling houses are classed as preferred risks. As a rule the average valuation of each piece of property is comparatively small, the premium is not large, and there is no united pressure brought by the owners on the companies to reduce the rate to the point where it should be. On the other hand hazardous risks as a rule cover large values and united action on the part of the owners of similar risks is brought to bear on the insurance companies, the result being that the rate is lowered to a point below what their experience tells them it ought to be. The most serious effect in cases similar to the above is that since the rate is not proportional to the hazard there is insufficient incentive to the insured to improve his risk. Any underrating of hazardous risks is an economic mistake. That there are preferred classes is unquestioned, evidence of this being seen in the excessive commissions paid to agents for certain classes of business. Another evil effect of discrimination is that certain companies cater to this kind of business and under the pretense of transacting fire insurance business have confined themselves solely to these classes, the result being small losses and excessive profits. In other words they have secured the 'cream of the business' and left the balance to the other companies.

The honest application of a schedule which has been formed with each hazard carefully calculated eliminates all discrimination and even if the schedule is not perfect, it adjusts rates properly among a given class and thus eliminates discrimination among

members of the same class. The whole object may be summed up in the following: "reasonable equity is obtained so long as personal favoritism is abolished, and every man accorded the same charge or credit for the same item of hazard."

That there is a movement toward the ideal is apparent because dwelling house rates have been coming down for a number of years and will come still lower if the public demands it.¹ By lowering these rates, then rates on the more hazardous risks will be compelled to seek a higher level.

In schedule rating there are three important elements that must be recognized - construction, varying loss record in different states and varying loss record from year to year. Elements of construction are fairly well known and although not entirely correct, yet as a general rule they are equitable and free from discrimination. The element of place is not so well known and established. It is true though that the loss record increases as we go westward. For instance out of twenty-two states chosen at random eight east of Ohio had an average burning rate of 55 cents per \$100 and fourteen west of Ohio had an average of 79 cents.² Materials of construction may cause some difference, but there must be other reasons for this increased waste. That this difference has existed in the past is equally true because an examination of early schedules show that the difference in the burning rate of different states has been recognized and provided for to a certain extent. In some tariffs the states had a different base rate. In others charges and deductions were changed. The Universal recognized this difference by providing

1. Report of Special Legislative Committee appointed to investigate Fire Insurance Conditions - New York -1911 p.6
2. Hess, Philosophy and Methods of Fire Rating -p.8.

a per centage charge when the loss exceeded a certain amount per \$100 and a reduction when the loss was less than a certain amount. Any rating system then that is to conform to statistics of varying loss records in different localities must provide some proper means of measuring this difference in burning rates.

The element of time is more difficult to understand and is even less generally recognized than either of the preceding two. The hazard does not change, neither does the general burning rate relation. Nevertheless losses do change from year to year according to no general law that has been discovered. For several years records may show heavy losses in all localities and on all classes of business. Then again during the next few years the loss ratio may be very low. At times these fluctuations may be accounted for by unusual weather conditions, of rain or drought, at other times by increase or decrease of moral hazard due to business depression or prosperity caused by the weather and success or failure of crops. In one class¹ it ranged from 34 cents to 98 cents per \$100 and back again in four years; in another from 66 to \$1.33 and then back to 70 cents; in Wisconsin it has ranged from 50 cents to \$1.19 in the last twenty-one years, in Texas from 60 to \$1.30; New York from 26 to 47. During the last eighteen years the burning rate of the entire country has ranged from 50 to 78 cents exclusive of the San Francisco disaster when it soared to \$1.17. The extremes do not appear closely together, one period of five years showed an average burning rate of 66 cents the period immediately following 57 cents. Any schedule to be permanent and adequate must not ignore these fluctuations if it is to be equitable to all in-

1. Hess, Philosophy and Methods of Fire Rating - p. 11.

urers.

In the United States the average rate has ranged from \$1 to \$1.25.¹ All former schedules with the exception of the Universal have contained no provision whatsoever for such changes. If various years showed varying loss ratios the schedules were either arbitrarily advanced or decreased. This caused much complaint on the part of property owners and as a result the average life of these schedules have only been about five years. A flat or percentage change is unpopular and only temporary at the best. For example, Milwaukee began rating under/specially^a designed schedule in 1893. Three years later the Buffalo Mercantile was substituted, in 1901 another schedule took its place and in 1906 the Dean was attempted. Before any new tariff can be applied there is almost sure to be a rise or fall in the wave of annual loss which makes the new rates either too low or too high. There is no assurance that when they become effective, they will fit existing conditions.² If the rates are too high competition will make it necessary to employ competitive rates which from their very nature are out of alignment with the other rates and as they multiply, all of the relativity as well as fairness in the tariffs are destroyed. Past history in the fire insurance business has shown us that rates must be constantly changing. We cannot maintain them at an unvarying level because the loss wave varies. One year the losses may be small, the year following they may be large. No fixed law can be stated in regard to them. The average loss for some past definite period may be determined however, and it is this average that should be

1. Hess, Philosophy and Methods of Fire Rating - p. 14

2. ibid - p.17

used as a basis for the final rate, the final rate curve running approximately parallel with the loss curve.

The rater must realize that the rate is made up of a number of elements, that they are merely comparative.¹ When a hazard is expressed numerically it is not the hazard itself but its relation to other hazards that is thus expressed. All of these charges are numerical expressions of the relative amounts of fire hazards in those features of the risk to which they specifically apply. Because fire hazards are by nature a network of relativity we must decide what kind of relativity they are.

All relations of fire hazards are relations of quantity. These relations are coexistent such as difference in hazards due to construction and differences due to different localities, and sequential due to a changing experience from year to year. Any measurement of quantity involves the use of a standard which by definition must be known by experience. Now any differences must be expressed in the terms of the standard. The rating schedule in order to measure quantity must be a standard and as such must be the same wherever used. It must be made up of the relative hazards of construction, occupancy, protection and exposure and must also include the different experiences in different parts of the country and also the changing experience from year to year.

The hazards of construction can be covered by specific charges as determined by classification. Now the difference in experience in different parts of the country and the changing experience from year to year are not subject to any fixed law.

These must be lumped together in one sum which is called the basis

1. Hess, Philosophy and Methods of Fire Rating - p. 19.

rate. In one sense these base tariffs are a classified analysis of fire hazard. As to form and method employed in determining them they should be uniform for the entire country. There is an obvious necessity that there be a national basis¹ tariff as a central standard of comparison in bringing about uniformity of analysis and arrangement, and preserving consistent relations among the various state tariffs. In this way only can consistency be maintained in basis rates, charges, credits, standards of construction and other hazards in each state tariff with relation to other state tariffs.

In constructing a basis schedule analysis is made of certain features of the hazard as determined by classification and to each of these is attached a charge, while to the residue consisting of the unanalyzed parts is attached a lump charge known as the basis rate. The difference between the base rate and the other charges is that the former includes all charges too obscure, indefinite or unimportant to schedule and which can not be definitely determined by experience, while the latter is made up of specific charges based on classification experience.

The only hazard common to all risks is the unanalyzed hazard and therefore the only charge that is found in all risks is the basis rate.² The charges for the analyzed hazard are made in percentages of the base rate and in this way it is possible to maintain constant and equitable relations between individual charges and between any individual charge and the base rate. Thus when there is a difference in the experiences of any two states, which calls for different estimates in these states,

2. Hess, Philosophy and Methods of Fire Rating - p.19 and 24

1: Dean, Fire Rating as a Science - p.89

this difference can be made by a change in the base rates. Similar risks then in different states will be charged the same, but the base rates will be different, and this difference in base rates will express the differences in the loss experiences of the two states. The great advantage of this form of schedule ratings is that there is only one change necessary to alter the rate if experience dictates that such a change is necessary, the base rate is changed and yet the same relations will continue to exist as before.

This establishment of relations among base rates and charges in the several states is^a necessity forced on the raters by state sovereignty as well as by the permanent differences found in climatic and social conditions. A tariff built upon the principles of relativity may require a period of adjustment in order to become consistent but when this consistency is once acquired it becomes a permanent¹ body of relations for the measurement of the fire hazard.

In theory there is but one average cost for each class but in practice fire insurance is not transacted in the United States but in 48 states each of which insists upon being treated as an independent sovereignty. Perhaps it is a good thing that state boundaries do exist as these boundaries divide the country into more or less pronounced geographical areas with similar characteristics. This enables the establishment of coexistent relations in hazard with reference to space areas having practically the same conditions thru basis schedules.

This may be illustrated² by the following: in Illinois the basis

1. Hess, Philosophy and Methods of Fire Rating - p.25
2. ibid - p. 26

rate for brick buildings is 60 cents and in Tennessee 85 cents. This difference is due to a difference in experience. Any change in experience can be readily incorporated in the schedule by simply changing the base rate.

The more the risk is analyzed the less will be the amount of the unanalyzed lump charge or basis rate. By reducing this charge to a minimum the greater does the rate become an expression of the true relation between the various hazards. In order to accomplish this, uniform classification is necessary.

On January 1, 1915, all of the companies, members of the National Board of Fire Underwriters, began to classify their risks on a uniform basis. It is clearly within the possibilities of statistical science to determine the relative degrees of hazard between lighting a building by candle, oil, gas, or electricity, or heating it by open fireplace, stove, or furnace and it would be equally possible to determine the same relations with all the more important construction and exposure hazards provided it were possible to locate in every case the cause of the fire. Some underwriters claim that this is practically impossible because the origin of fires are often unknown. The factory mutuals, though, have been successful in discovering this origin and have made every fire teach the companies a lesson. Now if they could find the origin does it not seem reasonable that the stock companies could do likewise? It seems to the writer that if every fire were carefully investigated either by a representative of the company or an inspector from the state fire marshal's office, the cause of many of the fires could be ascertained and also what is far more important, the moral hazard would be greatly re-

duced. It is not within the scope of an agent's duties to do this because it would cause more or less dissension among his clients. He would be looked on as a corporation's 'hireling' and people would have less faith and confidence in him.

Charges and credits should be based upon united judgment and experience. It certainly shows greater wisdom to adopt past experience as a basis of rating than to attempt to fix the rates by guessing at probabilities. Every underwriter has his own specific views in regard to what the relation is between specific hazards. Even this view is not absolute¹ for if a number of underwriters are asked what the specific charge for a certain hazard should be the chances are that no two will agree, and then if several days are allowed to elapse and the same questions asked again, it is probable that each will regard the hazard differently than he did before. It may be fairly assumed that large errors will be far less frequent and probable than small ones. Large errors are almost impossible so that the probability decreases as the amount of error increases. It may also be taken for granted that positive and negative errors will be equally probable and in the final rate the error will be counterbalanced. Under this leveling influence it seems safe to assume that each charge is automatically regulated within limits not far from the true mean. These assumptions would be correct if every risk had the same hazards in common, but it is reasonable to assume that this method would create preferred classes because it would only be by a rare stroke of luck that each risk would have an equal amount of positive and negative errors. It is

true, however, that the element of favoritism among similar classes to a certain extent would be eliminated because as a general rule the risks are similar and charges and credits would be the same.

Another argument against a complex system of classification is that in rating we are compelled to deal with parts of risks.

It would involve great expense and clerical work to list each risk according to its deficiencies and then to calculate the fire loss according to these deficiencies. Charges are established for deficiencies by observation, comparison, and conferences. It is known that a charge for a given factor that is unreasonably large will not hold against competition. If the charge is unreasonably small, experience or common sense will right it.

Fire insurance should profit from the steps now being taken by the life insurance companies. Until comparatively recent times, life insurance was issued only to those who could pass a creditable medical examination, in other words a standard was used to which all must conform. Now, however, this class is being extended. Statistics are being collected in order that the companies may determine what effect occupation, locality, family history, and personal impairment have on the average life of the individual. For this reason the Actuarial Society of America has been formed to combine the experiences of those companies wishing to write on all classes of lives. A uniform system of classification is used, the cards are punched in the separate offices, then they will be united and classified with the aid of the sorting machine into a great variety of groups. As a result the companies will be in possession of a complete

statistical analysis of the influences of occupation, locality, family history, and personal impairment upon the length of life of the individual.

Mr. E. G. Richards, President of the Commonwealth Insurance Company, recommends that a standard form of classification of the fire hazards of the entire United States be prepared and that a plan of reporting all risks written in the United States be devised such plan to require a report only of the amounts written with their classification. All losses with their probable causes should be reported and then by classifying all of these reports a feasible plan for schedule rating founded upon the classified experience of all the companies would then be national in scope and could justify general recognition as a conclusive and scientific system.

Prior to January 1, 1915, all attempts to induce the companies to combine their experience as a basis for making rates has failed. That the companies keep classifications of their own is well known, but the systems are not uniform and could not be combined even if the companies would allow them to be. They regard these experiences as a form of trade secret and are very careful about keeping the public in the dark concerning them.

Perhaps it is fortunate that combined classification was not begun at the very first for a false start might have brought the system into disrepute and it is always easier to start anew than to undo and patch up a system full of errors. To-day, however, fire insurance is in a position when something must be done. Many state governments have destroyed the rating function of the companies and have undertaken to perform this function themselves.

They consider fire insurance companies as quasi-public servants and that as such the public has a right to know the cost prices. There is far less to fear from an honest publicity than from the suspicions generated in the public mind by an ignorance of the facts. The attitude of the state governments seems to be that the companies have been given an opportunity to demonstrate the equitableness of their rates, which as a general rule they have failed to do.

The respective legislatures have been largely to blame for this absence of combinations, since they have passed obnoxious laws against all forms of combinations.

Another reason for uniform classification that is not so clearly understood is the difference between coexistent and sequential relations. The latter cannot be charged the same as a coexistent relation. Excessive losses of some years must be spread over all years, approaching a mean as nearly as possible. It certainly does not seem equitable that the cost of large conflagrations should fall on any certain class or at any specific time. The conflagration hazard is national in scope and should be spread over a large number of years. Whether it should be born by all classes is an open question. It is liable to come at any time, but risks in segregated districts are practically immune. It seems to be imposing a hardship on the small town or village to charge it for the conflagration hazard of a large city. Public welfare demands¹ an interacting system of rating which will distribute the crests of excessive loss waves so widely over space, and property values that these waves will

1. Dean, Fire Rating as a Science, - p. 97

be reduced to endurable proportion. If a class has an extremely high loss one year it is not just to double or triple the rate, but to spread this loss over a national class or all classes. The increase would be so small that the individual would not notice the rise, yet it would prevent competing companies coming in or of small classes bearing more than a just proportion of their losses. It is impracticable to observe state basis rates in classes where large values are concentrated in one risk and few risks in a state. In these cases state lines must not be considered and a national basis rate used.

Any system of insurance rating which does not discriminate between safe construction and unsafe construction, and between care and negligence is an injury to the community. Schedule rating should not only determine the rates equitably but it also should act as an incentive toward lessening the fire waste in this country. The reason why rates are increasing is that the fire waste is increasing. If fire waste could be reduced the rates would be lessened. One important way of reducing the fire waste is allowing a liberal premium for good building construction. In many instances today it is cheaper to build a non-fireproof building and insure it than it is to build a fire-proof building. An insufficient rate causes discrimination in its worst form because there is not sufficient incentive to cut down the fire waste.

Another reason why the underwriter should be interested in reducing the fire loss is that premiums are paid in advance against losses that have not yet occurred. If the loss ratios could be forced to fall gradually there will always be a

larger margin of profit in the business, even though the rates are adjusted from time to time to compare favorably with the loss wave.

The underwriter should also bear in mind that the business is changing, that the interest to-day is coming to lie in fire prevention and that the most progressive are those who most clearly see these tendencies. His function is changing and in the not too-distant future he will be paid for preventing fires rather than ^{for} paying losses.

The purpose of the modern schedule should be to educate and should be placed in the hands of all property owners. They should know or have a means of finding out the kinds of construction that resist fires to the greatest extent. That this movement is recognized can be seen in the great work now being done by the Underwriters' Laboratories of Chicago. Every building should be constructed with the idea of eliminating drafts.¹ It is possible to construct frame buildings that will actually resist fire longer than improperly constructed brick buildings by filling the space between the studs with fire resisting material, by cutting off all drafts, by using substantial timbers for posts and beams, and wire lathing.² Hard burned brick is the best fire resisting material, stone is dangerous. Iron work should be protected by some kind of incombustible material. A heavy support of wood is better than a naked iron column because the latter will collapse in a great heat while it takes a long time for the wood to burn through. Cast iron is better than wrought because it is less susceptible to deterioration due to rust. Fire shutters should

1. Moore, Fire Insurance and How to Build - 92.

2. ibid - p. 100

never be employed unless there is an exposure hazard, because they may conceal an internal fire until it gets ^{under} too strong a headway to be checked. Special care should be used in guarding a fireproof building against the dangers of an internal fire as when the contents in such a building once get on fire it is practically impossible to check the fire. In large cities where the conflagration hazard is large, plans should be devised whereby on certain streets, only absolutely fire proof buildings should be constructed, in this way forming immense fire walls that would check any conflagration that may start. In constructing these fireproof buildings every inch of the exposure surface should be fire proof. The time has come when the builder must consult one well versed in fire protective construction as well as the architect.

Chapter III

STATE INTERFERENCE

No small portion of the adverse legislation in force today has grown out of real or suspected discrimination as to localities. If a man in one part of the country is rated by the same rule as a man in another part he is generally satisfied. The average man is not so much concerned as to what rate he has to pay for insurance as he is with what the other fellow pays. The legislature of Wisconsin passed the valued policy law of that state because the inhabitants had been humbugged by "shyster" insurance solicitors. Under this law a company is compelled to pay the face of the policy in case of a total loss instead of on the value of the property destroyed. As long as the policy is kept at or below the value of the property the true principle of insurance, indemnity, is maintained, but whenever the policy insures the property for more than the property is worth this fundamental rule is ignored. Insurance then becomes a gamble with the odds strongly in favor of the insured. The moral hazard is greatly increased and as a rule this burden must fall on all insured alike, as there is no means whatever, of estimating its rate and placing it where it belongs. In Wisconsin the average burning rate increased from 57 to 66 cents a few years after the valued policy law went into effect. In other states a similar increase has been noted. That the law violates one of the fundamentals of insurance has been recognized by the courts in the construction that they have placed on

"total" losses.

Another grave act of some of the state legislatures has been their adverse legislation in regard to the coinsurance clause. The principle on which this is founded - that rates should be based upon the percentage that the insurance carried bears to the value of the property - is not only sound but is absolutely a requisite if the equities of the insured are to be preserved. It recognizes that the responsibility for maintaining a given percentage of the insurance to the value of the property must rest with the insured. A large number of the losses are partial and without coinsurance discrimination is produced in favor of the man who insures relatively large values for small sums, he knowing that if he has a loss the chances are in his favor that it will be small and amply covered at the expense of the one who carries a relatively high amount of insurance on his property. In Germany¹ and France this principle has been recognized and has been made a part of every policy. The injustice of it may be observed in the following example. A and B have two stocks of goods each valued at \$10,000. A knowing that most of the losses are partial takes out a policy for \$2000. B takes out a policy for \$8000. A pays a premium of \$20, B \$80. A loss occurs to both stocks of \$2000. A gets his \$2000 for which he has paid only \$20 and B gets \$2000 after he has paid out four times as much. Now with a coinsurance clause A would only have gotten \$400 and B \$1600. What is needed to prevent this kind of discrimination is a sliding scale of rates dependent on the relation between the face of the policy and the value of the property insured.

1. Zartman, Yale Readings in Insurance.

Another grave mistake made by practically all state legislatures is in the matter of taxation. A fair tax similar to the tax on other corporate undertakings would meet with approval. At present all companies are taxed a certain percentage of their gross premium receipts on the theory that this is necessary in order to pay for their supervision. The fact is that the tax is far too large, at least in the state of New York and this state may be taken as a typical example of other states. In theory the tax comes out of the profits of the business, whereas in reality it is paid by the policy holders. The injustice of this is that the companies are forced to do the collecting and the man who does not insure escapes this tax which should be borne by all. Then too the agent's commission is inflated by this additional charge because his commission is calculated on the gross premium.

Not many years ago all combinations of insurance companies were looked upon with public disfavor. The result has evinced itself in many states by so-called anti-compact laws.¹ These laws were passed at a time when the public considered all combinations of corporate undertaking with distrust. Combinations among insurance companies can not be considered in the same light as other combinations whose chief aim is monopolistic. The object of combinations among insurance companies is to prevent cut throat competition in rate making. There is always more or

1. At the present time the following named states have some form of statute in force forbidding or held to forbid combinations to fix premium rates - Alabama, Arkansas, Georgia, Iowa, Kansas, Louisiana, Michigan, Mississippi, Missouri, Nebraska, New Hampshire, New Mexico, Ohio, Oklahoma, Oregon, South Dakota, Tennessee, Texas, Washington and Wisconsin.

2. New York Special by Committee, Report I.

less competition among the members and as the bonds which hold them together are not very strong these combinations as a rule exist only for short periods. The companies realize that high rates with an enormous profit will induce new capital to enter the business and as a rule the old companies seek to prevent this. Competition among companies for country business is very keen because they wish to carry this business in order to offset the risk taken due to the conflagration hazards in large cities. There is also keen competition between the various board and non-board companies and with the mutuals and Lloyds.

In the eastern states companies have been allowed to combine in order to keep rates uniform. In some of the middle west states legislation has prohibited all forms of organizations of the companies to adjust rates. In others the agents of the home companies are permitted to make rates by conferences with each other, the foreign companies being compelled to abide by these. Other states allow the local agents to make the rates. In California the rates are made by the companies with no state interference.

The main tendency of anti-compact laws has been to break down the forces of beneficial action caused by schedule rating. While the rating is done by schedule, there is no such clear-cut relation between the hazard and the rate. The rates are estimates rather than relations, and while they are generally adhered to, there is just enough dissociation of the rate-making and the rate-getting to weaken decidedly the good effects of

the system of schedule rating upon fire protection.

The most important single event in the fire insurance world for some years was in the decision handed down by the Federal Supreme Court in German Alliance vs. Kansas case.¹ Under the Kansas Rating law every fire insurance company is compelled to file with the state superintendent of insurance general basis schedules showing the rates on all risks insurable by such company in the state, and all the conditions which affect the rates or the value of the insurance to the assured. When any such rate is excessive or not adequate for the safety or soundness of the company, the superintendent is authorized to direct the company to fix a higher or lower rate, dependent on the risk. Rebating and discrimination are also forbidden. The act does not give the Superintendent supreme authority, but provides that any order or notice of regulation made by him may be the subject of an action in any district court of the state to have the order or regulation vacated.

The company contended that fire insurance was a private business and that the superintendent did not have authority to fix the rates at which insurance must be sold.

The court maintained that the underlying principle in the case was that business of certain kinds holds such a peculiar relation to the public interest that it becomes subject to the right of public regulation. It then proceeded to show that the business of insurance was of vast importance, and that a large part of the country's wealth, subject to loss through fire, is protected by it; that its effect is to create

1.59th Massachusetts Fire and Marine Insurance Report.

a fund of assurance and credit which becomes an asset or a basis of credit to the insured, thus being practically a necessity to business activity and enterprise, and therefore essentially different from ordinary commercial transactions. It comes, the court held, within the scope of the principle that a business may be so affected by the public interest as to warrant regulation and become subject to be controlled by the public for the ^{common} good. The opinion sets forth what has been done by the various states in the way of regulating insurance companies and the transactions of insurance business, and held that the liberty of contract guaranteed by the Constitution of the United States is no more intimately involved in price regulation than in the other forms of regulation as to the validity of which there is no dispute. It swept aside all the arguments and precedents for considering that business to be a private business in respect to which the public has not the right to receive and demand service, and all the other contentions that the fixing of rates by the state is taking private property for private use, and rested on the broad ground that insurance so affects the public welfare as to make it proper for the state to regulate the price at which it may be sold, which regulation is only in line with what the states have been doing for many years. Three of the justices of the court dissented from the majority opinion.

It is interesting to observe how the present tendency of the principle of state regulation is opposed to the principle of anti-compact laws. Under the latter premeditated and enforced uniformity of rates was prohibited while under state

regulation the effect is to secure absolute conformity. The anti-compact law in fact made bargaining possible and this is directly opposed to equitableness because of the gross discrimination. By the United States Supreme Court allowing the state to regulate the rates there is great danger that the power taken from the companies will be used for political purposes. The state has no classification tables and even if they did have the application would require the work of experts. The situation would have to be very aggravated that would warrant the state in assuming such an extended and technical piece of work. Then too the size of the state is not sufficient. Insurance is based on general average and no one locality is large enough to compute averages on. If rate-making were lodged with the state, and if the experience of that state were favorable, the tendency naturally would be to make the rates from that experience. Now the most serious effect of this would be that in case of a large conflagration it would be impossible for a company to recoup itself; for if each state stood on its own experience it would refuse to permit a rise in rates caused by some outside loss, the result being that the state in which the conflagration occurred would have to pay the entire loss. An actual example of this occurred when the state of Wisconsin¹ refused to allow the rates in the state to be increased following the San Francisco disaster and as a result Wisconsin escaped paying her just share of the conflagration rate.

Prior to 1909 rates in Texas were anything but fair and just. Many of the largest property owners and insurers in

1. New York Special Legislative Report 1911.

the state, particularly in the larger towns and cities, exacted and obtained from the insurance companies certain special privileges in the way of rebates and lower insurance rates, which were never accorded or allowed to the small property owners. As a result of these conditions the Fire Rating Board Law was passed in April 1909 and later amended. This law was the result of an appeal on the part of the Local Agents' Association for relief from the intolerable conditions wrought by unscrupulous competition. This law, though it is not perfect does, however, preclude discrimination and makes the rate on similar classes of property the same.

The heretofore favored classes have aroused some agitation against the schedule system of rating, largely it is believed because their rates have been increased. The Board has collected data on the relation of the fire loss to the premiums received for the period 1909-1912 and has found that the losses plus the expenses have far exceeded the income of the companies.

The Board is working in close touch with, and have drawn largely upon the experience of the National Board of Fire Underwriters and the National Fire Protective Associations. The Board thus seems to be striking at the root of the cause of an excessive fire waste and consequent high rates, by standardizing every important elementary feature of hazard in construction, materials and occupancies and investigating every tangible feature of fire hazard.¹

In Missouri there has been much public complaint as to

1. 37th Annual Report of Commissioner of Insurance and Banking, Texas.

the rates charged for fire insurance and the method by which they have been fixed. Anti-trust statutes were passed in 1895 and were expressly applicable to fire insurance companies who used the same rates. Notwithstanding this law, rating bureaus were maintained throughout the period for the purpose of furnishing what was termed "estimates," which consisted of specific rates on each risk in the state.

This method of fixing rates in so far as the companies were concerned prevailed in practically all of the states, the companies contending that it was the only practicable and economical manner in which the rating could be done.

In 1911 the legislature enacted what is commonly known as the Oliver law. This act provided that every fire insurance company operating in Missouri should within thirty days file with the Insurance Superintendent general basis schedules showing all charges and credits which in any wise affected rates, and should within ninety days file specific rates for each risk or class of risks derived from its general basis schedules for each city, town and village, in the State.

The act further authorized the Superintendent of Insurance, upon complaint being made that any rates or schedules so filed were unreasonable, unjust and discriminating, to make an investigation and determine what rates would be reasonable and just.

On the 9th of December 1912 the companies through an actuarial bureau, having prepared the survey of risks, offered to file with the Insurance Department the specific rates derived from such surveys, but these the Superintendent rejected

on the ground that the basis schedules and specific rates derived therefrom were unjust, unreasonable and discriminating.

This was followed by much confusion and uncertainty as to what constituted the lawful rate in the state. The companies contended that the rates they offered to file were the only rates at which property could be carried, while the Superintendent insisted that such rates were unlawful, and that until he officially accepted same, rates should be fixed as under the former law.

Agents were instructed by the companies that these rates were mandatory and must be adhered to and these instructions were generally observed and carried out.

In most cases the new rates were higher than those previously charged. As a result the Legislature repealed the rating law and re-enacted the old anti-trust act, with an additional declaratory section.

At this action most of the foreign companies went into open rebellion. On April 30, 1913 they withdrew from the state. The companies contended that the legal effect of the latter statute was to preclude them from using and being governed by estimates prepared by rating bureaus or from directly or indirectly fixing rates through joint agencies, and therefore they could not safely and successfully operate here.

Governor Major, Superintendent Revelle and the Attorney-General publicly declared that the fears of the companies were without foundation and that the anti-compact statute when reasonably construed in accordance with the manifest legislative intent, did not prevent any company from successfully operating

thereunder or from applying to their business recognized principles and practices.

After a suspension of about three months the companies resumed business.¹

The Legislature of 1915 passed a new rating law. Under this law the insurance companies are compelled to maintain a public rating record from which the premium rate applicable to each risk may be ascertained. The records are always open to public inspection. The companies cannot raise the rates without the approval of the Superintendent of Insurance, and if he refused to approve a proposed rate increase the burden of proof is upon the companies to show that the increased rates are reasonable. Unlawful discrimination in rates is punishable by fine or imprisonment. Each agent is required to write upon the back of the policy the various charges making up the total rate, thus calling the assured's attention to any extra hazards.²

In trying to find out why the public as a rule seem so hostile towards insurance companies it becomes important to examine the earnings of the companies. The following data was compiled by J. H. Woodward, Head of the Auditing Bureau of the New York Department of Insurance.

Taking the six largest companies in the United States at random for a period since 1890-1910 the average earnings were 10.1%. The dividends have averaged 5.4% that means that they have distributed a little more than half their earnings in dividends and kept the remainder in the business

1. 44th and 45th Annual Reports of the Missouri Superintendent of Insurance.
2. Spectator March 22, 1915.

where it has gone mostly to increase the surplus and is thus at the risk of a conflagration.

Six medium sized companies chosen at random have shown an average earning rate of 6.6% half of which has been paid out in dividends the balance remaining in the business.

Six of the smallest companies have shown an average earning rate of 4.5%, dividends 3.4%.

Of six new companies from 5-10 years old, three have lost money.

Of six branches of foreign companies three have lost money.¹

These average earnings show that what money has been made in the fire insurance business has been made by the old established companies and that new companies are just as likely to lose as to make money. The prosperity of a company corresponds quite closely to its size and standing. On the whole, companies have not made an excessive profit. It should be kept in mind that a fire insurance company may lose everything in one conflagration. No company of the first rank has gained a footing in the business during the last thirty years. Of the 213 companies licensed to do business in the state of New York in 1875 only 69 remain the balance 144 having withdrawn and in nearly every case gone out of business.

As a general rule fire insurance companies are not being organized by men familiar with financial conditons, it is next to impossible to secure financial backing in Wall Street sufficient to organize companies. By far the larger part of the

1. New York Special Legislative Report 1911.

money now invested in this form of corporate undertaking belongs to small investors.

CONCLUSION

The Supreme Court of the United States has decided that it is within the power of the individual states to regulate rates. The success of state rate-making depends on whether the states will recognize (1) the individual features of a risk, such as construction, occupancy, fire protection, and exposure, (2) different loss experience in different localities regardless of state lines, and (3) a changing loss experience in all localities from year to year. Reasonable equity can only be maintained by a proper consideration of the above points and it is this equity that the states should seek to secure.

One point, however, that the state officials must bear in mind if they assume the rating function, is that there is no way of compelling the fire insurance companies to write insurance upon any risk which the companies are not willing to accept. If the rates dictated by the state are too low the companies will decline the business and there is no way of forcing the companies to accept it. The capital of the insurance companies is in a very liquid form and it would be very difficult for the states, if not impossible, to seize it and force the companies to do the states' bidding.

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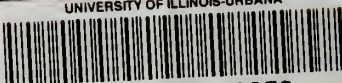
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